OUR BOOK SHELF.

The Revival of Phrenology. The Mental Functions of the Brain. By Bernard Hollander, M.D., &c. Pp. xviii + 512; illustrated. (London: Grant Richards. 1901.) Price 21*s.* net.

ACCORDING to Dr. Hollander, the connection between mind and brain has long been waiting for a discoverer, and he is determined that it shall wait no longer. "The present work aims at clearing up the mystery of the fundamental psychical functions and their localisation in the brain. It is the first work on the subject since the dawn of modern scientific research." We expect that an author who claims to clear up a mystery and to write the first work on a subject since the dawn of scientific research should at least be acquainted with the present position of the science with which he deals, but we do not find that Dr. Hollander has satisfied this preliminary requirement. The very title of his book indicates that he is not before, but behind the age. Mental phenomena are not functions of the brain in the modern medical meaning of the term "function," and if by "the fundamental psychical functions" Dr. Hollander means the primary divisions of mind as recognised in modern psychology, then we cannot find evidence in his book that he knows what they are. "Most men," he says, "regard mind as though the term were equivalent to intellect and did not include the feelings and fundamental impulses." "The great majority hold mind to be equivalent to intellect." We do not know whether by "most men" and "the great majority" Dr. Hollander means the majority of the whole population, or of the whole male population, or of neurologists, or of psychologists. If he means either of the two former, he is probably wrong. If he means either of the two latter, he is certainly wrong; so wrong that it is difficult to believe that he has opened a book on psychology that has been published within the last half-century. When a writer presumes to lecture the whole world of psychologists in the tone of the Supreme Being addressing a group of blackbeetles, he should at least make himself acquainted with the rudiments of their terminology. He would then avoid speaking of "faculties" as "forces." He would not say that "satisfaction, discontent, desire, fear, anger . . . &c., are so many states of our internal organisation which . . . exist . . . without consciousness . . . being necessary."

"The data amassed by the author," Dr. Hollander modestly asserts, "are so considerable as to open up quite a new field for research." These data consist of more than 800 cases, which are alleged to illustrate the connection between some special brain-area and some special phase of mind. The first group are "cases of melancholia due to injury to the central parietal area." A number of cases of injury to the parietal region are adduced, but in many of them there is little or no evidence of melancholia. Whenever, in the reports, the word depression is used, Dr. Hollander accepts it as the equivalent of melancholia, though it is quite obvious that in many cases it means hebetude, stupor or coma. Melancholia is attributed to blows on the parietal region that were inflicted four years, five years, six years, fourteen years, seventeen years before the patient came under treatment. Of the innumerable multitudes of cases of lesion of the parietal region without any sign of melancholia resulting, not a word is said. This is not scientific investigation; it is special pleading. Dr. Hollander pleads that in view of the important bearing of his facts upon the entire development of medical science, on the study and treatment of lunacy, on the education of the young, &c., the evidence and statements may be received willingly and in fair spirit, however critical. We have endeavoured to comply with his request. We have weighed his evidence, and it seems to be of the same value as his statements.

St. Kilda and its Birds. By J. Wiglesworth. Pp. 69; illustrated. (Liverpool: C. Tinling and Co., 1903.)

ON his return from an ornithological trip to the St. Kilda group last summer, Dr. Wiglesworth delivered before the Liverpool Biological Society a lecture on these islands and their inhabitants—human and otherwise. This lecture has been published in the volume before us, and although the author has little or nothing absolutely new to tell, he has undoubtedly succeeded in producing a very interesting work, which ought to be invaluable to all future tourists in these islands. Although the extension of the breeding range of the fulmar-petrel to the Shetlands has deprived St. Kilda of one of its claims to preeminence, yet it possesses an absolutely peculiar form of wren as well as two mice of its own, while it is also one of the chief breeding-places of the fork-tailed petrel. Moreover, its breeding-list of other sea-birds is comparatively large, so that the island possesses especial interest for the ornithologist and egg-collector. Unfortunately, the latter individual has of late years made himself somewhat too conspicuous, and "when it comes to dealers giving unlimited orders for fork-tailed petrels' eggs at prices which set the whole male population of the island on the alert to dig out every petrel-burrow they can possibly come across, one cannot but feel considerable anxiety as to the future of this interesting species." High prices are likewise paid for the eggs of the St. Kilda wren, of which large numbers are exported. It would therefore seem that the island stands in urgent need of the special attention of those interested in bird preservation. One of the features of St. Kilda is the number of species of petrels by which it is inhabited, while not less noteworthy are the hordes of puffins which swarm over its grassy slopes, and tenant almost every available nook amongst the rocks and boulders.

But it is not only for its birds and mice that the St. Kilda group has a special claim on the interest of the naturalist. One of the islets, Soa, or Soay, is remarkable as being the only locality in Great Britain where sheep exist in a wild condition. It appears that in the latter part of the eighteenth century the owner of St. Kilda laid claim to one out of every seven sheep born in the main island. These sheep were carried to Soa, where, in the absence of anyone to look after them, they ran completely wild. And by this accident has been preserved to our own time the very small and peculiar breed of sheep which was probably once common to St. Kilda and most of the western islands, but has everywhere, except in Soa, been modified by the introduction of other breeds. Most of these sheep are light brown in colour, although a few are almost black, and others nearly white. They are so wild and shy that they cannot be approached within 100 yards, except by careful stalking, while their activity and speed are such that they cannot be hunted down by the dogs of the islanders. A ewe of this sheep, as well as the skull of a ram, are exhibited in the Natural History Museum. R. L.

The Principal Species of Wood. By C. H. Snow, C.E., Sc.D. Pp. xi + 203. (New York: Wiley and Sons; London: Chapman and Hall, Ltd., 1903.) Price 15*s.* net.

IN producing this work the author has evidently spared himself no pains to collect a vast amount of statistics concerning the genera and species with which he deals. The work is also profusely illustrated by plates, and these, along with the general equipment of the book, reflect credit on artist and publishers. Tabulated statements concerning the different species are given, and contain data such as modulus of elasticity and rupture of wood, as well as notes on its various struc-

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tural qualities and representative uses. These will prove of value to both expert and amateur.

From its title one might be led to suppose that the book was an addition to the literature of strict forest botany, but the preface states that "It is intended for those who are not foresters or botanists, but who use woods or desire a knowledge of their distinguishing properties." The preface further states that "Although great care has been taken to check each fact, errors no doubt exist, although it is not believed that there are important ones." We cannot entirely agree with the author in this. For example, in the introduction we are told that a true wood fibre originates from several cells, "a resin duct is a cell structure or a fibre," "a vessel is a short wide tube joined vertically end to end with others of its kind."

Inaccuracy and vagueness of expression are to be found elsewhere in the book. For instance, "Europeans regard the Ash for ornamental purposes, but Americans value it for wood" is an error that may perhaps be excused in an American writer, but why should the leaves of Eucalyptus be described thus?—"Those of young blue gums are bright blue, oval and stalkless, while leaves of older trees have stems (*sic*), are dark green and sickle-shaped."

Attention is further directed in the preface to the fact that "Allusions to trees, historical and other references, aside from those directly regarding woods, are made for completeness and in order to mark, distinguish, or separate the species." The author fails to realise this object. The distinguishing characters given are far too vague and general to be of any practical value.

On the whole the book contains much useful information and statistics regarding the various species of wood, both broad-leaved and coniferous. It would have been much better, however, had the author confined himself to the treatment of this aspect of the subject alone, leaving out all botanical and other technical matter.

Lehrbuch der Mikrophotographie. By Dr. Carl Kaiserling. Pp. viii + 179. (Berlin: Gustav Schmidt, n.d.) Price 4 marks.

ALTHOUGH there are several well-known treatises on this subject, it is doubtful whether any exceed in thoroughness the one now under notice. The essential conditions for the production of photomicrographs of the highest class are carefully described, and each part of the process is treated fully.

There is no more important point than the illumination of the object itself, and both the source of light and its colour should be selected to bring out the desired points in the resulting photographs.

This part of the subject is generally treated all too briefly, but in the present instance its importance is evidently recognised. The various ways of making light filters and their use with coloured preparations are described. The method of arriving at the proper filter to use with a given preparation is stated to be by determining the absorption spectrum of the dye used for staining, by aid of a hand spectroscope, and then adapting the light filter to give the result desired. This is undoubtedly the only scientific method of using colour screens in photomicrography, and one which we have adopted with success for some time past.

The various types of apparatus by the leading makers are fully described, prominence being naturally given to continental firms. Instructions as to the use of substage apparatus, methods of centring, choice of objectives, and the combination of microscope and camera are included, while it is satisfactory to nŏte that no space is unnecessarily wasted over purely photographic processes. Altogether the book may be recommended to photomicrographers as one of the best yet published. J. E. B.

LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. *No notice is taken of anonymous communications.]*

The Source of Radium Energy.

THE novel and unforeseen property of radium of producing energy, which purely kinetic theories, in opposition to the notion of inherent force as a transcendental element, do not seem able to explain, is perhaps destined to give a fresh impetus to discussion from the two distinct points of view. It is meanwhile to be noted with regard to this, that the notion of force acting at a distance from point to point, being equal and reciprocal between the various material points, does not appear to be any better met by the manifestation of the unfailing energy of radium than the simple movements of the kinetic theory. This remark justifies attention being directed to a view of the natural physical forces presented by the present writer more than ten years ago (see Lagrange's "Study of the System of Physical Forces," forming vol. xlviii. of the *Memoirs* of the Royal Academy of Sciences of Belgium). It is there shown that forces exist of such a nature that static equilibrium is impossible, on the impact of bodies of different composition, at their surfaces of contact. They are forces making a body, after the example of radium, emit rays unceasingly without apparent loss of substance. A force of repulsion is referred to here, emanating from the surface, and not from the centre of the mass of atoms, acting on opposed surfaces, and the varying intensity of which is nothing else than what is known to science as absolute temperature. That repulsive force, acting in the inverse ratio of the volume of matter (or of the cube of the distance), just as Newtonian gravitation acts in the inverse ratio of the surface (or as the square of the distance), takes its immediate development, and to some extent visible shape, in Mariotte's law of the relation of pressure to volume in gases. The memoir establishes the existence of a continuous interatomic medium of transcendental qualities not yet understood, conveying the effect of a force acting at the surface of atoms, and the real seat of luminous and electromagnetic wave motion, according to the views to which clearly Lord Kelvin has of late returned. The view now presented is entirely deduced from analysis of the actual facts, worked out at length, and justified by the memoir, and new so far as the case of the impossibility of an equilibrium due to the surface force of repulsion, which gives rise to an exhaustless emission of energy. The reflecting attention of physicists may therefore be legitimately directed to the subject, because it seems certain that the new properties which radium manifests are not explainable by the kinetic hypothesis, but, on the contrary, are of a nature henceforward to modify considerably the speculations of modern physics.

Brussels, July 14. CH. LAGRANGE.

A New Case of Phosphorescence induced by Radium Bromide.

IT is known that salt (NaCl) at a temperature of 200° C. is phosphorescent (*vide* Phipson on "Phosphorescence," p. 20); during a course of experiments in June last I found that radium bromide induces phosphorescence at ordinary temperatures. The following is a convenient way of observing the phenomenon. Fill a wooden match-box with table salt removed from the inner portion of a block; press the radium bromide tube into the yielding mass and just barely cover it with the substance. If it be now put on one side for a few hours, say into one of the compartments of a chest of drawers, on opening the box in the dark all round the tube will be found to phosphoresce with a white light, but, unlike zinc blende and barium platinocyanide, the salt continues visibly to phosphoresce after removal of the radium bromide. The portions of salt round the tube are turned of a faint buff or ochrey tint. The image of the visible portion round and where the radium bromide tube has lain is impressed on a photographic plate in thirty

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